

# Yellow Grub Machine

Food Dehydrator from UpYourSolar.com



Passive Solar Powered ~ Uses No Electricity

Great for Hot & Dry Climates

10 Shelves Provide 15 sq ft of Drying Space

Collapsible and Easy to Store

Designed for Easy Air Movement

Use Outdoors or Indoors

Water resistant for the surprise rain shower

Keeps Bugs Out

*Disclaimer: This instructional provides materials and steps that worked for us! We encourage you to have fun and customize this project to your liking. Please read and understand all instructions before attempting this project as any attempt to build using our plans is completely at your own risk. In no event will UpYourSolar.com be liable for any loss, damage or injury arising from the use of this information. Whew!!*

## Materials:

Canvas Hanging Wardrobe

Adjustable Garment Rack or other method of hanging the wardrobe

10.3 oz tube School Bus Yellow Silicone Caulk - \$5.25 + shipping - EMISupply.com

About 12 oz mineral spirits

40 oz or larger container for mixing

Stick for mixing

Drop cloth

qty 2 - 2" to 3" chip brushes

1 yard red marine grade vinyl

24 sq ft of fiberglass window screening

Black sharpie marker

1 tube clear silicone caulk

Standard size caulking gun

3/4" thick plywood piece - approx 12"x19" - depends on measurements of the canvas wardrobe you choose

10 yds of 1-1/2" wide nylon or polyester seatbelt webbing

40 heavy duty pin-on drapery hooks

Epoxy Adhesive

1 pkg Sew-on Velcro - 36" x 2" (105834) **NOT PEEL & STICK**

Sewing Machine

Qty 2 - 8 ft long x 12" wide wire shelves from Lowes

Medium duty bolt cutters

1/4" Heat shrink tubing - about a foot

Lighter

Fiberglass window screening or 3 rolls Weston Dehydrator Netting

## Instructions:

### Preparing the canvas wardrobe:

Excellent ventilation is necessary! Choose a calm day and work outside in the shade. Ideal temps for paint curing would be between 60 and 85 degrees F.

- 1) Assemble the garment rack and adjust to the tallest setting. Place the rack outside where you intend to do the painting.
- 2) Remove canvas wardrobe from packaging and smooth out wrinkles with an iron. Set temp of iron according to the fabric content of the canvas. Yes, you can iron indoors.
- 3) Install metal support and hanging hooks included with the wardrobe.
- 4) Hang your canvas wardrobe on the garment rack outside.

Painting the canvas wardrobe: 2 people and 2 paintbrushes will make this step go much faster.

- 1) Place your drop cloth under the wardrobe, protecting the work surface and bottom of the rack.
- 2) Using the mixing stick, combine the entire tube of yellow silicone with about 12 oz of mineral spirits. Make sure to mix in a container that holds about twice the volume you're mixing. A large coffee can worked great for me. Be patient and mix slowly to avoid splashing. It will appear at first that the 2 ingredients will not combine, but they will. Continue mixing until well combined. If necessary, add more mineral spirits a little at a time to reach the consistency of medium thick pudding.
- 3) Paint outside top and sides of wardrobe, avoiding plastic window areas. Using a little elbow grease, work paint into the canvas for best results. Expect a slightly translucent watercolor look. It will not look like a perfectly painted wall, nor is it supposed to. Do not paint the bottom as it may need to shed water in the future if it were to get stuck in the rain.
- 4) Allow your wardrobe to remain outside until dry. Bring inside to continue to next step once the smell has dissipated to an acceptable level. This could take up to a couple days. Make sure to choose a wind protected area for drying. Direct sun is a good thing at this point of the process.

### Creating the 9 round windows:

- 1) Using either a compass or round template, draw 3 circles on 3 sides of the outside of the wardrobe. Your black sharpie marker will be perfect for this. Each circle should measure about 8.5" in diameter. Measure down 4" from the top center of each side to place your top circles. Make sure they are centered from side to side. Use the same 4" vertical spacing for the other circles as you move down the wardrobe.
- 2) Cut the circles out. You will appreciate how the yellow silicone paint has made the canvas fray proof, water proof and very durable.
- 3) Tracing around a 10" diameter round template, draw 9 circles on your fiberglass window screening. Again, use your sharpie marker. Using the compass in this step could be problematic.
- 4) Cut out your screen circles.

5) Using the red vinyl, create the 9 round frames using either the compass or template method. Make the outer ring 12" in diameter and the centered inner ring 8.5" in diameter.

6) Cut out your window frames.

7) Center an 11.5" diameter round template on each of the 9 frames and trace around it to create the black outline. Fill in with the marker to the edge. Do a similar process to outline the inner edge. If you're particularly steady, draw the outline free handed. Resist perfection for an old school cartoon look.

**Attaching the screens and red frames to the canvas:** This is all done on the painted side of the canvas. Glue up one side panel at a time and allow each panel to cure (or dry) a couple hours before continuing to the next panel.

1) Using a scrap plywood backer or appropriate size protected countertop, nicely flatten one side panel to your surface. All 3 circles per side need to be flat at the same time. I found it helpful to use a clamp here and there to hold the canvas in place.

2) Open your tube of clear silicone and place in the caulk gun. This is your "glue". The only practical "glue" to use on a silicone surface is silicone.

3) Run a thin bead of silicone 1/4" to 1/2" from the edge of the round opening. Place a round screen over the opening not being too concerned about adhesion at this point.

4) Working from the back side of the vinyl frames, run a medium thickness bead just inside both the inner and outer edges. Spread to edge with your tool of choice. I had good results using my finger.

5) Lift the frame trying to avoid messy contact with the silicone. Carefully place the frame over the screen and gently press into position. Wipe off any slop with a paper towel. Grab fresh paper towel often to avoid reapplying the slop you just removed.

6) Repeat this process with the remaining 2 circles on the side panel.

7) Allow the silicone to cure at least 2 hours before repositioning to the next panel.

8) Once the 3rd and last panel has been assembled, leave in the flat position overnight before moving.



## **Creating the inner shelf support:**

- 1) Measure the dimensions of the top panel of your wardrobe. Cut your piece of plywood to fit.
- 2) Cut 2 pieces of webbing 33" long. Gently melt raw edges with a lighter to seal and prevent fraying. Fold each piece in half lengthwise and mark 2-1/2" down from fold. Pass back and forth several times at this 2-1/2" mark with your sewing machine to create the hanging loops. Now mark 3-1/2" from each of the 4 ends. This will serve as a guide when attaching the 2 hangers to the plywood piece. Set the 2 hangers aside.
- 3) Cut 4 pieces of webbing 55" long. Seal all ends with lighter.
- 4) Lay out a piece of webbing on an appropriate size board or countertop, aligning short edge of webbing with edge of surface. Position a tape measure over the webbing, hooking the tape measure end over the edge. Extend the tape measure to the same 55" length. Align long edge of webbing with long edge of tape measure. Clamp the surface, webbing and tape measure together at both ends to avoid shifting.
- 5) Using your sharpie marker place a dot at 7-1/2". This will mark the position of the top drapery hook/rack holder. From there continue with dots spaced at 3-1/2" intervals. So, 11", 14-1/2", 18" etc.
- 6) Repeat step 5 with the remaining 3 webbing pieces.
- 7) Optional: Using scrap fabric or 1/2"-1" wide seam binding, sew a lengthwise pocket into side of webbing opposite the dots. This will provide extra protection from pointy ends of the drapery hooks.
- 8) Attach velcro and webbing to the plywood: Refer to Rack Assembly diagram to position and attach components. Make sure your 55" webbing has the black dots facing inward. Take note that the 2 looped hanger pieces will be attached to one side of the plywood, and the remaining 4 pieces attached to the opposite side.
- 9) Using the black dots as a guide, pin your drapery hooks into the 55" webbing. If you choose to forego step 7 above, make sure to bury the pointy end back into the webbing.

## **Installing the new rack support assembly:**

- 1) Remove the canvas rack currently hanging on the garment rack or other hanging system.
- 2) Remove the current inner support rack and hangers from the canvas rack.
- 3) Place the inner shelf support assembly on a table corner with the looped hangers facing up, and the webbing with hooks tucked up underneath.
- 4) Position the top of the canvas rack over the plywood rack support.
- 5) Using a pen, mark where to cut the access slits to fish the looped webbing through. Refer to detailed photo for best explanation.
- 6) Carefully cut the canvas at the 4 points.
- 7) Detach the velcro from the front of the rack and fish the ends up the access slits in the back of the canvas. Then down through the front slits before reattaching the velcro.
- 8) Lift the looped hangers up and thread the top bar of your rack through the loops.
- 9) Untangle the webbing rack supports so they hang freely inside the canvas. Zip up the canvas so the cats don't get in.

## Creating the Racks:

- 1) Gather up your 2 wire racks and bolt cutters.
- 2) Sharp edges will be created with the cutting process, so make sure to protect your work surface or work outside where scratches aren't an issue.
- 3) Using the bolt cutters, completely cut off the 90 degree lip on the front of both shelves.
- 4) File or grind off sharp edges.
- 5) Using the sharpie marker, mark where to cut to create 18-1/2" long shelves. If the depth of your garment bag is more than 20", you can go a little longer. Do your math though. You want to get 5 identically sized shelves out of each 8 foot shelf.
- 6) Make your cuts.
- 7) Cut appropriate lengths of heat shrink tubing to fit over the cut wire ends. usually 1/4" to 1/3". Use a lighter to gently heat the tubing until it shrinks tightly onto the ends. Rubber caps are usually sold separately where racks are sold. They would add a nice finished look, but are crazy expensive.
- 8) Position racks inside canvas wardrobe.
- 9) Cut 10 pieces of either Weston Dehydrator netting or fiberglass screening to fit on top of the racks.

**Note:** There is chatter out there on the web voicing concerns over the use of fiberglass screening for dehydrating. It is feared tiny particles of fiberglass might flake off the screening and get lodged in your digestive system. However, fiberglass is much easier to use because it lays flat on your racks, and easier to clean loosely rolled in the dishwasher. Lightly oiled before use will prevent sticking.

On the other hand, Weston Dehydrator Netting is FDA approved. The rolls are quite rigid and need to be ironed between dishcloth or terrycloth towels to flatten before cutting to size. Time and patience are needed. Even once ironed out, it is hard to get this stuff to lay flat.

It's up to you to decide. Both options are show in the photos.

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